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ATOMIC ENERGY COMMISSION
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Pasadena, California

Dear Linus:

I note by yesterday's paper that you made a speech in Chicago on radioactive fallout in which it was claimed you stated that the British H-bomb tests would cause 1,000 people to die of leukemia. I am very interested in the details of your calculation of this number. I suppose that we probably know more about radioactive fallout than you do, but I am quite certain that none of us here knows as much about leukemia, so I would like very much to see your calculation. I enclose copies of my most recent speeches on radioactive fallout and I would much appreciate receiving yours.

You will note in my April 26 speech that I discussed briefly the question of the relative importance of radiation as the cause of genetic and somatic damage. In the experience I have had in the study of hot atom chemistry, it seems to me that radiation effects can be only a small fraction of the total. For example, if genetic damage is due to hydroxyl or per-hydroxyl radicals, the metabolic processes in the body are likely to produce these radicals even in greater numbers than the natural radiation dosage which, as you know, is many times the fallout dosage. Therefore, I think the calculation which assumes a radiation-induced effect being much greater than 10 percent of the total effect may be somewhat doubtful. I note that Professor Muller suggests that about 10 percent of the spontaneous mutation rate is due to radiation. I would be most interested in your reactions to this technical point.

I will anticipate hearing from you soon. I am most seriously charged with responsibility in connection with weapons tests, and I am most anxious to learn whether we have made any mistakes or whether our conclusions are in any way wrong on the subject of the risk from weapons tests.

Sincerely yours,

W. F. Libby

Enclosures